

A

VISIT TO VICHY,

COMPRISING A SKETCH

OF ITS

MINERAL SPRINGS

AND

THERMAL ESTABLISHMENT,

WITH A NOTICE

OF THE

MEDICINAL USES

OF THE

VICHY WATERS, SALTS, AND LOZENGES,

BY

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P R E F A C E.

THE following pages hastily put together amidst the fatigues of travelling, contain an account of the mineral waters of Vichy and their medicinal uses, as well as an outline of the treatment usually practised at the springs, and the maladies in which it is mostly prescribed.

It has not been deemed necessary to enter into a detailed examination of the theories which have from time to time been proposed, as to the mode of action of this class of remedies on the human system. Further, numerous points insisted upon by French writers on Vichy, have been simply enumerated or altogether passed over.

The object of the publication is to furnish such special information on the leading French Spa as may be useful to the English practitioner, so that a mere reference frequently takes the place of extended explanations.

The few comments interspersed are so condensed as to leave the pamphlet at least the merit of brevity. Whether the author has succeeded in imparting to it clearness the reader will judge. He hopes it will be found to contain all that is necessary on the subject. For what is superfluous, provided it relieve the dulness of other details, he will probably receive the same measure of indulgence that has been accorded to his other productions.

18, DOVER STREET,

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A VISIT TO VICHY.

I.

ON my return this spring from the Riviera, beneath whose smiling sky I had spent the winter, I made a little *détour* in order to spend a few days at Vichy and try the effect of its mineral baths on a little patient under my care. There is a rather round-about railway communication between Lyons and Vichy, so that it was only a little out of our way on the journey from Marseilles to Paris—a circumstance which might be taken advantage of by those invalid travellers to whom a stay at Vichy would be likely to prove beneficial either before or after a winter in Southern Europe. The railway from Lyons passes through an interesting district. At St. Etienne and for a long way round, coals exist, so that the traveller may fancy himself in a "*black country*," on a small scale; after traversing this, the line crosses a lovely plain, the scenery of which bears considerable resemblance to that of many an English landscape. In the distance, even in summer, every here and there, snow-fringed mountain tops may be descried mingling with the clouds and constituting an agreeable variation in the scene.

During what is called *the Season*, that is from the 15th of May to the end of October, an express train runs daily between Lyons and Vichy. My visit being paid just before the season had commenced, I could not avail myself of this. We were consequently the whole day—about ten hours—on the road, for in spite of the praises which have been lavished on the administration of French railways, I would from considerable experience advise no one to expect punctuality

except in the express trains. The ordinary trains are very slow, continually stopping, and I have invariably found them behind time. The only advantage I have observed is that the second-class carriages are equal to the first on most of our lines. Those who are willing to pay a first-class fare would always do well to travel by express, (there are no second-class carriages on express trains), and in a long journey this is the most economical plan, as double the distance can be done in the day. A new line will shortly be opened which will greatly reduce the distance between Lyons and Vichy, making the deviation so slight that numbers of our countrymen will probably avail themselves of the route.

On arrival at Vichy in the evening, we made direct for the "Grand Hôtel du Parc," which had been recommended to our notice, and where, from experience, I can advise the traveller to make his stay. After a moderate delay, we were supplied with one of the best meals we had ever obtained in a French hotel, and this fact will bear some significance to those who like the writer have not unfrequently found it difficult to obtain any refreshment on reaching after the *Table d'hôte* hour, some of the more pretentious and frequented hotels in France. After a good night's rest in clean and comfortable beds, we rose next morning ready to explore the place, and put in practice the treatment I had proposed for the little invalid of the party.

In front of the hotel is the Park of the Thermal Establishment one side of which is seen on the left of our balcony. This Park, though small, is very thickly planted with trees, so that it always offers a shady walk. Behind the hotel are the Imperial Gardens—a new park as it were, planted with flowers and shrubs of many varieties and great beauty, winding among which flows the river Allier, quiet and calm enough now, though, not long ago this fickle stream swelled forth in more majestic mood, and inundated the fair valley with its waters. Since then, a dam has been constructed, and a portion of the stream carried in another channel, which

adds considerable beauty to the gardens, and will, it is hoped, avert all future danger. It will be seen that the "Hôtel du Parc" is well situated for salubrity and convenience. It is close to the Thermal Establishment—the centre, around which all the life of Vichy revolves—and yet being between two fine open spaces the air is fresher than in more confined localities. As to terms, I found them moderate. In the height of the season the apartments are of course more expensive; indeed, rooms are only to be obtained by taking them in advance. Several Cabinet Ministers have staid at the hotel during the residence of the Court at Vichy, and I am informed that the Emperor has attended some of the entertainments given in the large room devoted to music and dancing. It is but fair to add that there are numerous other hotels in equal repute, as well as plenty of smaller or less pretentious ones. In fact, as in every place where the season is all in all, hotels, boarding-houses, houses and apartments to let, are to be met with in every direction.

Vichy has long been renowned for the hot springs of mineral water to which, it owes all its prosperity and on which, is founded its magnificent bathing establishment. No hesitation then as to where to pay our first visit. As soon as we had breakfasted we crossed the corner of the park and entered the building. It is quadrangular in form—this side being supported on pillars—above which the twenty windows of the upper story look upon the narrower end of the park. Passing beneath the central columns and ascending a couple of steps we entered the picture gallery, nearly 250 feet long, forming a sort of transept to the building, of which it occupies the whole length. Its walls are covered with paintings, and it is always open to the public. Left and right extend long corridors as far as the other end of the building, and on each side of these corridors the doors of the small bathing rooms are seen, each with its number, and above each the bell, which summonses the attendant. At the other end of the picture gallery,

and at right angles with it, forming what may be considered the front of the building, is the “gallery of the springs”—a sort of portico supported on columns—where at intervals for free consumption are some of the mineral waters. They are conducted hither in tubes direct from the earth;—around the orifice of each is a basin, so that they have all the appearances of fountains. Glasses as well as girls in attendance to wash them and fill them fresh for each person inclined to drink are also provided free of expense. Turning to the right on issuing from the picture gallery and passing to the end of the corridor we reach in the corner the principal spring of Vichy, called *Grande Grille*, on account of a large iron fence with which it was at one period surrounded. There is nothing particularly striking in it—a large fountain-basin as it were, in the centre of which water—and that not very clear, is copiously bubbling up. There is, however, a perceptible warmth as of vapour, in the atmosphere around. Touching the waste water in the basin it is warm. Stretching forth the ladle that lies for use—but, stay, a brisk maid puts forth her hand to do it for you with her “*Veuillez boire, Monsieur, Madame,*” fills with this long ladle a tumbler, and presents it to you with a smile. You taste. It is hot, soapy, at first nauseous, but the taste is soon acquired. Observe, that this young woman takes special care to fill the glass from the very centre of the bubbling stream, so that you may take the medicine just as it comes from the bowels of mother earth, before it has had time to change in temperature or any other quality. Though paid by the company, the visitor who spends a season and drinks the water daily, and some take many glasses a day, usually presents on leaving, a *souvenir* in the shape of coin to the girl at the spring from which he drinks. She is also permitted for those who desire it, to sell tumblers graduated for measuring the exact dose, and keep them on separate pegs exclusively for the purchaser’s use.

Glancing at the people as they crowd after each other to take their draughts, the reputation of this

spring is stamped upon the countenances of its patrons, and the same remark is equally applicable to the other springs. The Grande Grille is strongly recommended for chronic diseases of the liver, spleen, pancreas, and other abdominal viscera; and here the really ill as distinguished from the mere idlers and pleasure-seekers are of the various shades of pale, sallow or yellow, combined with the peculiar physiognomy mostly apparent in patients whose ailments are referable to the organs of this great cavity.

At the opposite end of the gallery is the spring called *Mesdames*, presenting many points of contrast. It is nearly cold instead of hot: it does not come up in nearly such large quantity. The actual spring is not immediately underneath, but at a considerable distance—the water being brought hither in tubes. The centre of the font, as well as the ladle, are coated with a precipitate of iron. At the invitation of the presiding nymph, taste, and you will find a cool inky draught in place of the former hot, soapy one. Then the faces of the devotees at this shrine wear altogether a different aspect. It is as a chalybeate that it is most sought; not that the water does not contain the same alkali, but, in consequence of the iron found in it, the medicinal virtue of this metal is superadded. In place of the middle-aged, worn-out, sallow-yellow face of abdominal organic mischief, we accordingly meet here the fragile frame of anæmia and protracted convalescence: young girls, growing too fast, or whose blood-making powers are inferior to the demand made upon them.

Between these two—say about the middle of the gallery, is another spring, named *Chomel*, after the physician who discovered it, and first described its peculiarities. This water is warm, and its taste more simply sodaic. It is destitute of any chalybeate or other peculiar ingredient, and those for whom it is mostly prescribed do not carry their maladies so distinctly in their countenances. It is celebrated for certain disorders of the stomach, and is said to agree when none

of the other waters can be taken, so that it is often recommended in cases of doubt, or where there seems some slight contra-indication to the treatment. We observe also that this spring is not a fountain. In place of the basin, here is a small pump by which the water is raised as required to this elevation, but which as soon as you approach, a girl in charge begins to work, so that she may offer you a glass pure and fresh from the depth of the well below.

The above are the only springs in this gallery—the others are more distant. It will, however, be convenient to name the principal ones in this place. There is one in the middle of the Park called *Source du Parc*. Its characteristic ingredient is a minute portion of sulphuretted hydrogen, imparting to it a mild flavour of rotten eggs—just as if a dash of Harrowgate water had been mixed with one of the Vichy springs.

Farther off, on the opposite side of the Park, through which we may walk to it, is the Hospital spring, in the centre of an open space, called the “Place Rosalie,” and in front of the Hospital of the town. It is in great repute for certain very chronic derangements of the chylopoietic viscera in nervous or delicate patients, and is said to be more easily assimilated than the Grande Grille. The class of persons frequenting it varies much from those named above. On the steps leading up to the cupola which protects it, you encounter the most elaborate toilettes of the fair sex, the faces of men stamped with the wear and tear of town life, and the exhaustion of pleasure-seeking and fashion, as well as numerous tourists and idlers sipping the water as a part of their natural employment while staying at Vichy, while here and there, care or hard brain-work seems to have driven the patient to this remedy. At this spring the Emperor mostly drank, and, of course the Court followed suite: it is probably the most popular of all at the present day—unless the *Célestins*, should still bear off the palm. It may be worthy of note here, that on the surface of the large basin which

surrounds this fountain, a quantity of green scum is particularly observable—only confervæ, such as would be seen on any water, says one—a substance altogether different, and only to be met with in the Hospital spring of Vichy, say others. We need not stay to enter into this controversy—which is already sufficiently embittered. Let the *Savans* of Vichy decide the point—being on the spot and possessing the needful data.

Walking still further away from the establishment, almost the same distance as already traversed, we shall come to the two springs named *Célestins*, after the monks of that order, in whose grounds they were situated serving as a great attraction to their monastery, the ruins of which still remain. The *Célestins*, perhaps, are the most celebrated of all the springs of Vichy; they are cold, highly charged with gas and salines, and quite agreeable to the taste; to drink them is something like taking a bottle of soda water. They have been used by some in the greatest excess, the number of tumblers consumed daily by enthusiastic patrons being almost incredible. At present this folly is abating. Vichy water is a potent remedy, and an abuse of it likely to lead to serious consequences. The *Célestins* are mostly recommended for gout and diseases of the kidneys and bladder, are very efficacious in some forms of gravel, and have been tried with success in albuminuria and diabetes. This water is said to be endowed with stimulant qualities, and Dr. Durand Fardel* relates a case in which he thought it produced a sort of intoxication. The confirmed toper would, however, probably be very slightly inebriated by the largest doses, and even the most susceptible victim of hysteria, or the most excitable of nervous invalids need not fear to taste it. Perhaps the monks selected the spot for their monastery from a profound respect for the quality of the water—an explanation

* Lettres Médicales sur Vichy, Paris, 1860.

this, too, of the obstinate battles waged in the middle ages for possession of this building—situate as it was in the midst of a country producing wine of no great strength or bouquet. It almost belongs to the propriety of things, that the gardens in which it is placed should now be the *rendezvous* of the gouty, and other elderly free-living gentlemen, who here congregate and partake this substitute for fine “old crusty port.” These devotees are accommodated also with a sheltered divan, where they may rest, read the paper, take their coffee and cigar and talk over their progress and the virtues of the water with their fellow worshippers. The view from the grounds and the situation altogether is one of the most picturesque in the neighbourhood, and the enormous rock, whence flows the stream, is an interesting subject of geological speculation.

Close by is another spring—the *Lardy*. There are also several others, the property of the Company which leases the whole from the crown but which need not be enumerated here, as well as some of smaller importance belonging to private individuals.

II.

To return to the establishment from which we have thus far wandered. On the first floor of the building at the time of our visit were large lofty saloons where, every day during the season, a ball, concert, or other entertainment is provided at a low price by the Company. Here also are reading rooms, smoking rooms, conversation rooms, &c. A small theatre is supplied by Parisian performers, the plot of the play being generally laid at Vichy. During the last summer a handsome new Casino has been opened. This building is situated at the opposite corner of the Park, and will form a new ornament to the town. To it all the amusements have been transferred, so that the whole of the spacious first floor of the establishment can be converted into bathing

rooms, except, perhaps, the offices for business purposes to which a staircase leads from the gallery of the springs. Descending to the most important part, it is worth while to enter some of the bath rooms, and witness the air of comfort and cleanliness they present. There are 200 of these little rooms dispersed round two square gardens, so that each can obtain fresh air, and an agreeable view without being overlooked. They are well-furnished and lofty. A window into each garden gives the light to the picture gallery—the set on one side of this division being devoted to ladies baths, and the opposite one to those for gentlemen. At the end of one row is a suite set apart for the Emperor's use—of course, a model in every respect, and which will be, no doubt, inspected by most of those who may have the opportunity of visiting it. Besides these baths, there are shower baths and douches. Nor should the carbonic acid bath, which has recently been introduced, be omitted. This bath may be taken with the clothes on; it consists of an ordinary slipper bath with a cover; the gas is brought by pipes from one of the springs, and can be turned on by an ordinary tap. The patient reclines in the bath, the attendant puts on the cover leaving the head only outside, further protection is ensured by the neck being closely enveloped in flannel so as to prevent the egress of the gas. Local baths of carbonic acid are also employed, the gas being directed on to the part affected by tubes of appropriate size.

Leaving the building by the western door, we observe opposite us, divided only by the street, another of similar dimensions and shape, but without the upper story. That contains the second-class baths, and is arranged in a similar manner to the other. It was erected in 1858; contains 200 bathing-rooms and twenty douches—enough for 2,000 baths in a day of twelve hours. The second-class rooms are rather less elegantly furnished, but are clean and comfortable, and contain everything that is necessary. We should also have

named, that there are large baths where a number of patients may bathe together—swimming baths in fact. Since 1863, there have been added to this edifice twenty-four third-class baths for the sick poor, at sixpence each, linen included.

Having finished an inspection of these buildings, we reserved for the next day a tour over its dependencies, when the managing director and his chief assistant kindly accompanied us on our expedition. In the following account, for the sake of brevity, the information obtained on several visits is naturally condensed into one.

Before going farther, it may be well to mention what is usually understood by the expression “a course of Vichy treatment.” The water used for the baths is a mixture of all the different springs—diluted at the time of using with an equal quantity of ordinary water. A bath of pure mineral water is never given, unless by an express medical order, the reason being that undiluted mineral water is said to produce too powerful an effect, and the physicians of the place assured me that they scarcely ever prescribed them. I tried the effect of one myself, but did not perceive any difference, though, of course, one experiment of the kind could be of little value. The patients who undergo “the cure” at Vichy, take a bath daily for three weeks or a month. Drinking from one of the springs is generally prescribed at the same time. Occasionally a second course of treatment is tried at a later period of the year, or—if the first have been at the close of the season—early the ensuing one.

In order to provide these baths, the waters of the several springs are conducted by pipes to a huge tank, where they freely mix together. Hence, they are raised by steam pumps to the top of a tower. The same engine also raises fresh water to the same level. A visit to these tanks and to the engine of ninety horse-power, proved very interesting. To raise the water, it takes a force equal to twenty-four horses—

the surplus power being employed to heat the fresh water to a proper temperature, to keep in motion the machinery in the laundry, and for other purposes of the establishment. In the height of the season, this engine works night and day to keep up the needful supply of water. As many as 3,500 baths can thus be given in one day.

For these, a laundry on a surprising scale is necessary. The quantities of linen to be seen is simply inconceivable—linen, too, of a texture which would do many a housewife's heart good to handle. We inspected a series of shelves, estimated by our guides to contain between £6,000 and £7,000 worth of towels and other linen articles in daily use. A point, also, of considerable importance in this department is, that after three years wear or so, the whole of this must be renewed. Some of it was shown us which was as friable as paper—the effect of its continual soaking in the alkaline waters. The washing is done by steam. As soon as the bather leaves the four or five pieces he has used, they are taken to the laundry, and passed successively through several copper cauldrons, in which they are kept in motion by steam, and so their impurities rinsed out. A particular description of the whole process would not interest many readers. Suffice it to say, that when clean, they are taken into an upper room, round which pipes are laid carrying the waste steam. This heats the room sufficiently to dry the linen—as the moisture is carried up a flue by the ingress of fresh air being provided for from below. Description can give but a feeble idea of the extent of this laundry, and we soon descended from the drying-room, the heat of which was oppressive, and only relieved by the fierce current near the flue—a current, we were assured, strong enough to tear off any ladies clothes who should be rash enough to approach too near.

III.

We next went to see the manufacture of the Vichy salts and lozenges, to which a separate set of buildings is devoted. For these purposes the mineral water is evaporated in enormous reservoirs, and the solid ingredients collected and dried. This process is rather curious, and demands a word of explanation. Entering the room where the last part of it is carried on, you may walk freely about the planks which are laid across the huge boilers of heated water, the atmosphere of this vapour bath being anything but exhilarating. The tanks are so arranged that as one is emptied it can be filled from the one next hottest, so that the process need not be interrupted. The hottest of all is next to the door—and from this, as soon as the salts begin to thicken out, men with large wooden shovels take out the precipitate and throw it down a funnel to a room beneath, where, after drying, it is packed for exportation in little cylinders. This is but one part of the process; this residuary salt is only employed for making baths. The finer chrystals used for the lozenges, or pastilles, as the French call them, are separated at an earlier stage. The water being conducted into large open vessels, first of all cools and looses its carbonic acid so that the more insoluble salts of lime gradually subside. It is only then that the water is heated until the degree of concentration is reached at which the carbonate of soda begins to chrySTALLISE. It is now placed in large open stone reservoirs, and after the soda has all separated, the water is conveyed to the room where the remaining salts are extracted for baths. From the above facts it will be obvious that the finer, whiter chrystals which are preserved for the lozenges consist entirely of carbonate of soda. This substance is then placed in a room filled with carbonic acid brought direct from one of the springs, in order to re-convert it into the *bi*-carbonate. Even then, supposing the latter combination

to be perfectly effected, it can scarcely differ from the ordinary bicarbonate of soda of commerce, and, whatever other solid matter exists in Vichy water would naturally go to the residue, which is exported as the salts for baths. In a chemical point of view, this idea is so natural, that I could not help suggesting it to the managing director of this great enterprise, adding that the whole might as well go to the baths—and bicarbonate of soda be purchased in an ordinary way for the manufacture of lozenges. This observation led to an explanation, which may as well be summarised in this place, as it will assist the understanding of much to follow. The springs of Vichy are State property as well as all the buildings, &c. They are leased for a term of years by a company, but during the lease certain restrictions are imposed. The products may be utilised in any manner, but may not be adulterated or *mixed with* anything, and a government inspector is charged to see that these regulations are adhered to, to the letter. The whole establishment is under State control, and to prevent fraud and give the purchasers the best guarantee, no bottle of Vichy water is sold without the proper label—no lozenges are allowed to leave the premises, except in particular boxes, labelled, closed and sealed, in a manner to prevent their being opened, except by the purchaser. These boxes are made on the premises, giving employment to a number of young girls. The cardboard is cut into bands for the sides, by a sort of chaff-cutter; another implement cuts out the oval top and bottom of the box. These fitted together and lined with white paper are left to dry, and then filled and labelled. Each box is surrounded by a peculiar band under which is confined a piece of string; the ends of this are enclosed in a small seal of lead, on pulling which, the string cuts through the band and so opens the box, the lid of which would afford some difficulty to raise, but for this ingenious little contrivance, so firmly does the band paste it down.

We have yet to see the actual manufacturing of the lozenges, and here the general air of cleanliness which prevailed was at once apparent. The loaves of sugar are cut by a circular saw into slices, and these are thrown into a mortar, the pestle of which is kept revolving by a band from the steam engine. The requisite quantity of the salts, the extraction of which, from the water, has just been described, together with sufficient gum is added. When these are thoroughly mixed, the next stage of converting the powder into paste by means of water is accomplished, and the mass is handed over to numbers of men, who with polished steel rolling-pins, roll it into flat layers on the marble slabs which surround the room. The general appearance of the apartment is that of a baker's or a confectioner's. The layers of paste of proper thickness are placed upon a flap of the machine which is regularly projected and withdrawn for this purpose. As it retires it passes under the sharp cutters which descend upon it, and, in a moment, divide it into a number of lozenges. The baker-like man takes these to place to dry, and adds the fragments which are necessarily left to the next portion of paste as he kneads it. The engine devoted to the lozenge-making is of twenty-four horse power, and above a hundred thousand lozenges can be turned out in a day.

We may now look at the bottling department, which is conducted on an enormous scale, and in which a number of ingenious contrivances were pointed out. Each bottle is filled from a tap, to which the water comes fresh from the spring, a cork being immediately thrust in by a machine for the purpose, similar to those of our soda water factories. The man who controls this passes the corked bottle to another close by, who sees that the cork is level, puts a little resin to it from a kind of glue-pot by his side, and passes it on to a man who places on it a capsule, on which is printed the name of the spring from which the bottle is filled. This capsule is ingeniously fastened by passing it into

a loop of string which, on being turned round, closes it tightly upon the neck of the bottle. It is then handed on again to another man who affixes the label. After this, it has to be placed in a covering of straw—such as we sometimes see certain wines come to this country in—and then packed in cases ready to export. This mode of packing is rather more expensive, but in practice is economical from its preventing breakage. These straw cases for the bottles are all made on the premises, as are the boxes in which they are packed. The bottled Vichy waters are sent not only to all countries of Europe, but to the most distant colonies, and their sale is continually increasing, as will be seen from the following figures.

In 1853 380,150	Bottles.
— 1854 487,705	—
— 1855 547,900	—
— 1856 658,800	—
— 1857 709,300	—
— 1858 766,500	—

In 1859 968,750	Bottles.
— 1860 1,058,450	—
— 1861 1,157,496	—
— 1862 1,262,875	—
— 1863 1,485,520	—
— 1864 1,680,510	—

Thus the town of Vichy derives wealth, not only from its Thermal Establishment, but from the great trade carried on in its products, from which more than 500 persons find regular employment.

IV.

We have now inspected the ordinary sights of Vichy, but all these preliminaries paled in interest before our expedition to the actual springs where the mineral waters come up fresh and hot from the bowels of the earth, and are thence conducted by human ingenuity to serve the purposes of the company. The managing director kindly undertook the duty of guide, so accompanied by him and a lady, I descended the necessary steps, preceded and followed by boys with lanterns, to explore the dark subterranean caverns. Under all the buildings

described and far beyond do the engineering operations of Vichy extend, and we marched one by one under long ranges of arches where daylight never comes—under the picture gallery—under the corridors—under the long ranges of bath rooms—transversely—directly, and I know not how else besides nor yet whereunder—
—but at any rate on—on, under

“Arches on arches—piles on piles extending,”

till at last we came to the *Puits Carré* as it is called. It is a large square well as the name implies—where continuously comes bubbling up the hot water—filling the tunnels all along with its heat and steam—in fact, we were in a complete vapour-bath, but more than usually oppressive from the gas which escaped. A light let down a little way was instantly extinguished by the free carbonic acid rapidly disengaged—although a large cone is placed over the well to carry away as much gas as possible to the carbonic acid bath-room, and to the room of the lozenge department already noticed. Nevertheless we felt the oppression much, and hastened away through more long galleries—much cooler and less oppressive—till at length as they again got warmer and warmer we were nearing another spring. This was the *Grande Grille*. We stood some twenty feet away and watched it for a few minutes pouring out from a height of three or four feet, its uninterrupted supply of hot water; looking at this as it flowed in a large stream just by our feet into pipes, which conducted it away, we felt it was not an exaggerate statement, that from this spring flow daily 240,000 litres of water at a temperature of 107° to 108° Fahrenheit. After gazing a few moments at this wondrous stream we passed on—or backwards—along similar, or perhaps, the same subterranean passages for some distance, where it was cool—indeed, after the previous heat, cold—then it got warmer again, and we came to the large reservoirs where the major part of the water

from all the springs is conducted, and all kinds freely mix together. The heat was terribly oppressive, but we looked steadily as the little lanterns blinked beside the dark caverns. Leaving the lady with the torch boys, my guide with one lantern, preceded me on a narrow plank across one of those great cisterns to see where the pumps of the steam engine took the water from, to force to the tower. I shall not readily forget my sensations here. On the other side so thick was the darkness, the lanterns were only seen like sparks a long way off—so far it seemed, nothing was easier than to fancy that our companion had started back and gone a long way along the caverns, but not so,—only we had moved. As the eyes became a little accustomed to the place, my guide holding down the lantern to the surface of the water, I could discern—stretched out beneath my feet on each side, and only separated by a thin plank—the surface of the water with some of its green scum upon it, otherwise black as night; but no boundaries were visible—the feeble rays of the light were lost in the darkness, so I could not see the size of the cistern, nor the height of its vaulted roof,—only darkness above and all around—only the feeblest flickering of a kind of spark or two to indicate which way we must return—and our own little lantern to show us step by step of the plank by which we must get back from this tremendously hot and oppressive, vapour-loaded air. Altogether it was a grim situation—the dark water below seemed meet type of the shoreless sea of oblivion, and the little scum on its hot surface might stand for human woes and passions, while this atmosphere of heavy vapour—loading all the senses, and almost forcing one to fall into the abyss below, was but a feeble image of the sighs and groans of our suffering humanity. When we returned to the lady, the hot air which she declared almost stifled her, seemed to me cool and fresh. Then we wended our way to cooler and fresher still—then a glimmering of light began—and the freshness and coolness and light increased till we again came safely above ground.

V.

AFTER the foregoing sketch of its Thermal Establishment a few words on the history of Vichy may not be devoid of interest. The town and the use of its mineral waters, claim considerable antiquity. Some champions go so far as to trace the pedigree of its name to the Druidic *gwich* or *wich*, which may be translated *virtue*, *force*, or *strength* the letter *y* merely standing for the French *eau*—water. Water of virtue then—medicinal virtue no doubt understood. Like many long pedigrees, this is not quite satisfactory to all heralds. The more moderate enthusiasts content themselves with a derivation from the Latin *vicus calidus*, hot village, and the place is designated *aque calidæ* in the Theodosian table. It is said that Cæsar crossed the Allier at this point on his return from Gergobia to Roanne. The old Roman road passes in this direction, and there is a tradition that on a wooden bridge at this place he rested a short time on his weary route. In this practical age the finding of Roman remains, including baths, statuettes and coins, furnishes the best title to its antiquity. Medals bearing the impress of Augustus, Agrippa, Claudius and other Roman Emperors have been found.

Writers on this subject have supposed that the Romans erected buildings here which were destroyed by the Northern barbarians in their devastation of Gaul. Even if they did not destroy them, they would certainly take no care to preserve them, and so they would fall into decay.

Coiffier in his *Histoire du Bourbonnais* states that Vichy sustained a seige in the twelfth century. A little later the name of the place seems to have been borne by the chief landowner of the locality. The lands of this family were confiscated by the crown towards the fifteenth century.

Louis XI when *Duc de Bourbon* commenced building walls and towers, one of which now remains, and in 1410 he founded the monastery of the Célestins.

In 1446, Vichy was taken by Charles VII from his son the *Duc de Bourbon*, who thereupon retired to Cusset, where an interview and reconciliation took place, to the great relief of the people, who suffered from these civil conflicts.

Vichy continued to play a part in the subsequent struggles of the next two centuries—the monastery being for the most part the centre of the most obstinate battles.

In 1603, Medical Inspectors were appointed by the Crown to superintend the administration of the baths. A few years afterwards another order of monks, the Capucins, installed themselves in proximity to the establishment, and received their invalid brethren who came to Vichy for treatment.

In 1696, Louis XIV created by letters patent, a hospital for the poor—since removed to its present site on the *Place Rosalie*.

In 1676, Madame de Sévigné came to try the effect of the mineral waters, and here wrote her charming letters, which have made the valley of the Sichon known wherever the French language is read.

Not till the visit of Mesdames Adelaide and Victoire, in 1787, was there any real progress. Up to this date one little building, called the “king’s house,” served all the purposes of the place. These illustrious ladies resolved to remedy some of the defects, they could not but notice, and so became the founders of modern Vichy. There had hitherto been no walks or drives; rich and poor alike frequented inns which, even French writers describe as miserable and which, we may therefore conclude must have been—well, say indescribable. Each in turn took the bath as it was vacated, men and women using the same. The revolution suddenly put a stop to the efforts of “the ladies of France,” and few reforms could be effected until 1805, when the whole became the property of the State.

During the Russian campaign Napoleon I decreed to Vichy a sum of money with which some adjoining houses were added to the property.

The Duchess of Angoulême visited Vichy in 1814, and laid the foundation stone of the existing edifice, but this was not finished until 1829. In the following year, the revolution of July put a sudden end to the second visit of this lady who fled from here into long exile.

Some improvements were carried out by the Government in 1846, but not until the reigning Emperor began to take an interest in Vichy and visited it for health, did that impetus commence which has placed it at the head of all European spas—a position which under the present management it is likely to maintain.

VI.

THE neighbourhood of Vichy abounds in interest both to the tourist and invalid, affording as it does a great variety of walking, riding, and driving excursions. Numerous are the quiet sequestered nooks where a picnic would be sure to succeed.

The Allée de Mesdames is perhaps the favorite resort and certainly for beauty well deserves the praises that have been lavished upon it. It is a magnificent avenue of fine poplars, where shade can always be had combined with pure fresh air, fragrant flowers and lovely scenery—a thoroughly rural walk close to the town. This avenue leads to Cusset, about three kilometres from Vichy.

Cusset is situated between two streams, the Sichon and the Jolan, and surrounded on every side except the west by hills. It is an ancient town, its history going back to the ninth century, and its name has been traced by some to the old Celtic *cuzey*—hidden—in consequence of its position among the hills. Here it was that Charles VII met his son, and the house in which that important interview took place is shown to the curious. Here also are the ruins of one of the four towers which defended in bygone times the four gates. There are some large open parts where a pleasant walk may be had; the older part of the town

consists of damp narrow streets. Cusset possesses three mineral springs in which there is a chalybeate element, and these with corn and oil are its only sources of prosperity. Driving through it to L'Ardoisière about nine kilometres is one of the best excursions. The road follows pretty closely the course of the river, and we could not fail to be delighted with the scenery. Between verdure-clad hills, sloping away in various directions, the Sichon wends its way to the Allier—now in gentle noiseless lake-like calmness, creeping imperceptibly between fragrant gardens ; anon, as a talkative torrent hurrying over a narrower pebbly bed ; while now and then leaping down a sudden declivity, the noise of its little waterfalls mingles with the music of the feathered tribes and the hum of the insect world.

The hills in some places rise close to the road, at others they retire far enough to leave a green plain which reminded us of English landscapes. Some of our party considered this valley to rival some of the prettiest Swiss scenery.

L'Ardoisière is only the remains of a slate quarry. There is nothing to see—but we were sufficiently accustomed to this kind of result to expeditions to be satisfied with the scenery through which we had passed. The slate is not of good enough quality to pay for working, so on the property a little *café* or hotel has been fitted up where the visitor can obtain refreshments when he has walked over the grounds and seen the inevitable sights. The whole is, in fact, a sort of public tea-gardens ; there is even a pagoda for music. At one extremity of the gardens is a secluded avenue leading to a pretty waterfall. This also is one of the necessary sights. Our continental friends have either an excessively keen eye for the beautiful, as well as the curious and rare, or a very poor opinion of John Bull's judgment ; for they never fail to find something for him to see, and having seen to pay for. A house in which some one was born or died, a ruin which may have been a castle or may not, a convent, a church, anything in short which can be seen is

called a sight, and serves the purpose of extracting a franc from the well-filled purse of the credulous traveller. Every village has its monuments, and failing these, the scenery of valley or mountain can be done at a moderate tariff. It is the same story here. As in duty bound, we followed the boy who carried a lighted candle into a dark cave, until we came to a well said to be of awful depth, now full of water, and surrounded by a wall to prevent adventurous spirits from falling in. The boy considerately walked round, that by the distance of his candle we might judge of its size, and the sight was over. There was nothing else—not even a ghost,—nor a story of any one killed before the wall was built—nor could the guide tell us how long it is since the quarry was worked. But we could not satisfy him without going; we should have shocked not a few by visiting Vichy and not seeing L'Ardoisière. These gardens are thoroughly thronged in the season, and are really agreeably laid out. On the summit of a lofty hill which bounds them on one side, stands the ruin of a castle, said to have belonged to the Templars. It is a long weary road to reach it, so though the view from it must be extensive, we concluded to be content with our day's excursion, thinking there would be plenty of other sights more accessible.

LA MONTAGNE VERTE. Another favorite trip is to the summit of this “Green Hill.” The road which is available for carriages, passes near the spot where the Sichon empties itself into the Allier, then ascends gradually through vineyards to a plateau crowned by a “Kiosque,” where the visitor can find something to eat and drink while contemplating the valley of Vichy with its woods and plantations, intersected by the streams that descend from the distant ranges of mountains which bound the view.

Among the numerous other excursions which may be made, we ought not to omit that to the CHATEAU RANDON said to have been erected in the sixth century by some monks. In the twelfth century it became a feudal stronghold. In 1821 it was bought by Princess Adelaide,

sister of Louis Phillippe. A mile or two beyond this is the CHATEAU MAUMONT—the hunting *rendez-vous* of the nephews of the same princess.

There are plenty of other walks, rides, and drives—indeed, the facility for this kind of enjoyment is a great recommendation to Vichy as a health-resort. The constant out-door exercise, breathing of pure, fresh, bracing air, and the exhilarating influence of attractive scenery no doubt contribute their quota to the cures effected.

HAUTERIVE and CHATELDON may be particularised as each of these places possesses mineral springs. Hauterive is only a village about three miles off—its spring contributes some eighty-six cubic metres of mineral water daily to the establishment, at a temperature of thirteen or fourteen degrees Centigrade. This water is considered to be specially adapted for exportation.

Châteldon, eighteen or twenty miles from Vichy, is situated at the foot of a granite rock. The village is a jumble of houses, in narrow, tortuous streets; a stream called Vauziron passes through, and keeps the basements of most of the buildings damp. Many of the inhabitants, more especially the women, are effected with Gôitre—or Derbyshire neck. All the hill-sides of this neighbourhood are clothed with vineyards, which are said to produce the best wine of the Auvergne. An old castle with its *oubliette* or cell in which the victims were left to starve, is the inevitable sight of the place. But its chief importance is derived from the two Chalybeate springs which supply its miniature establishment. The waters are mostly used internally, and as they bear transport very well do not attract so many visitors as might have been expected from Dr. Desbrest's description of their virtues.*

VII.

THE chemical composition of the water of the different springs at Vichy has long occupied the attention of

**Nouvelles recherches sur les propriétés des eaux minérales de Châteldon.*

observers. The analyses of M. Bouquet made in 1852, and published in a memoir addressed to the Academy of Sciences under the title of *Histoire Chimique des eaux de Vichy* are given in Tables I. and II., and they agree in the most essential particulars with the prior investigations of MM. Longchamp, Berthier and Puvis, and others. M. Ossian Henry who was employed by the Government to examine the subject, reported the existence of iodine, bromine, and lithium, in several of the springs. More recently by means of the newly discovered mode of spectral analysis, M. Grandea has found indications of rubidium and cæsium. Accepting the main conclusions of the most able chemists, we find the most important ingredients of Vichy water represented by two distinct sets of principles, acids and bases, as will be readily seen in Table II. Only two of these principles are to be met with in a free state, viz., carbonic acid and silica. All the other ingredients are in a state of combination; consequently, it is as salines that they enter into the constitution of Vichy water. Some of the ingredients are doubtless, only held in solution by the large quantity of free carbonic acid equal to about half the volume, and as this gas escapes are consequently precipitated. It is to the loss of this gas and of heat that the considerable deposits around the fountains owe their existence. These incrustations sometimes cause considerable obstructions at the mouth of the springs. Around the Célestins an enormous rock has been formed. The most abundant compound of this acid is that with the base soda. The bicarbonate of soda it is, in fact, which gives the chemical characteristic to Vichy water, and on which its medicinal qualities mainly depend. The second Table shows on the average nearly five grammes of this salt in every litre of the water, which would equal nearly half a drachm in each tumbler. The largest quantity is contained in the water of the Célestins spring, the smallest in that of Mesdames. The bicarbonates of potash, magnesia, and lime, are present in greatly inferior quantities, and in a medicinal point of

view are of no consequence. The next most important ingredient is perhaps iron, of which traces are found in all the waters, and in those of Mesdames, Hauterive and Lardy sufficient to be considered of value. The distribution of iron is curious enough to demand a passing notice from its connection with the origin of mineral springs. Taking the Park as a centre we may describe a circle, the radius of which shall not extend beyond the Célestins. In this space will be enclosed all the original springs of Vichy, those which are simply alkaline in contra-distinction to those beyond the circumference of our centre, which are not only alkaline, but also Chalybeate. The Lardy is just outside our limit, and is, moreover, an artificial spring—an artesian well. Further off still, at two kilometres distance, is Mesdames—another kilometre beyond are the three springs of Cusset, all Chalybeate. Five or six kilometres from Vichy, are Hauterive, and St. Yorre, while at twenty are the springs of Châteldon.

The phosphates and the arsenic though in small quantities must not be overlooked from a chemical point of view, and may possibly be found to have something to do with the medicinal qualities of the water. Then the Strontia, and Manganese, and perhaps Lithia, will not fail to catch the attention of some readers. It does not seem to be decided whether iodine exists in Vichy water. Henry, Lefort, and Chatin, all found it, but it is not mentioned by Bouquet. Dr. Durand Fardel states* that the Society of Medical Hydrology of Paris, has named a chemical commission to settle the point, but I am not aware if its labours have been concluded.

I have already alluded to the distinct odour of sulphuretted hydrogen perceptible in the water of the Park spring, and this is not the only one slightly impregnated with that gas, although none of the before cited chemists seem to have met with it. M. Chevallier recognised its unmistakable odour, and MM. Prunelle

*Op. Cit.

and Baudrimont, speak of a sulphurous principle about the Lucas. It is possible that this gas may not be so constant a constituent as the solid ingredients, but any one ignoring its presence should certainly go to the spring and taste. It has been suggested that after the journey to Paris it may have disappeared, an opinion in which I cannot coincide, as I have met with distinct evidence of it in a bottle of Vichy water in London. Though small in quantity I am not prepared to deny that, to this may be due some of the modifications in the effects of different springs. Its presence in the Park would explain the reputation of that spring in some otherwise obscure instances.

Lastly, a few words on the substance that has been called "glaire." That a certain amount of organic matter should exist in all the waters might have been safely predicated—but that this is in any degree peculiar to Vichy is another question. Whether the green scum seen in some parts be ordinary *confervæ* or not would seem an easy question for residents to settle. As a mere visitor, I had no means of investigation at hand. I may say, however, that this disputed substance has no appearance to distinguish it from that of every pond—nor is it seen, except when the water is exposed to the air and stagnant, as in the immense basin of the Hospital spring—besides, it is never to be found in the bottled water. That the organic matter may be peculiar, and exercise some modifying influence over the other ingredients, though believed by many cannot yet be admitted as proved.

From what has preceeded it is clear that the chemical reactions of Vichy water should be those of the substances already indicated, and this will be found to be the case, not only at the springs, but in the bottled exported waters. Knowing then pretty accurately, the composition of the substance, can we not make it by an artificial process? Would not the simple solution of the salts in water charged with carbonic acid furnish us with an equally perfect remedy? The question has

been often asked and answered—negatively by most medical writers—affirmatively by parties who profess to manufacture a substitute. It is not necessary to enter profoundly into the question. Admitting that the bi-carbonate of soda may be dissolved together with the other ingredients in the proper quantity of water, there are yet various sources of fallacy which make it impossible for us to say that such an imitation possesses the properties of the genuine Vichy waters. First of all, the analyses though made by the most eminent chemists, cannot be regarded as absolutely perfect since there are perceptible discrepancies in the results of different observers. Moreover, we cannot deny that some substances may escape the most careful analyst; we are not referring to the organic matter which no one pretends to isolate, but even solid metallic ingredients may be present in minute quantity, and yet undetected. Rubidium and cæsium have only recently been demonstrated by the spectrum—and we can scarcely say it is impossible for these to produce some effect on the animal economy. Secondly, the results of the analyst may in some degree be due to the processes of the laboratory—they may be the products of the analysis, besides which, the quantities of the several salines are in reality only hypothetically calculated from the acids and bases. If then, some substances are too subtle to be separated, and others may be present without giving reactions to our known tests, how can we aver of any imitation that it fairly represents the waters of the springs? There is another point to be noticed, viz., that the mere putting together certain substances does not constitute the chemical compound. For example, we know very well the ingredients of wine though one of the most complex fluids; yet by mixing alcohol, sugar, and other constituents, in the most correct proportions, in the laboratory we cannot possibly produce a fluid which would pass for the product of the vineyard.

Such are the principle arguments against the use of *artificial*, as substitutes for *natural* mineral waters. In

this particular instance it is further stated by several authorities that the imitations of our mineral water factories will disagree with the stomach, when a bottle of true Vichy water will be easily assimilated. It is not necessary to pursue this subject further—since the establishment of a branch of the Vichy Waters Company in London, places the genuine products of the springs within the reach of all invalids, and Englishmen are not likely to consume the factitious waters while the genuine are thus easily procurable.

TABLE I.—FROM BOUQUET.

A VISIT TO VICHY.

TABLE II.—FROM BOUQUET.

NAMES OF THE SPRINGS.

VIII.

INTIMATELY connected with the chemical reactions of Vichy water, and, in point of fact, to a large extent dependent upon them, are the experiments that have been made with a view to ascertain its effects upon organic tissues. M. Barthez* has submitted portions of various textures to the action of ordinary water, and to that of the Célestins spring. He found that 200 grammes of fat immersed in a litre of ordinary water for six weeks, the water being changed once a fortnight, lost nothing in weight, and changed but little in appearance—only acquired an elastic spongy nature. The same weight of fat treated in the same way by Vichy water, though losing no weight, was converted into stearine—a result that might have been anticipated by any one acquainted with the chemical composition of the liquid. Muscle lost 109 grammes of weight in Vichy—only 45 in common water. A portion of ox liver of the same weight was subjected to a similar trial. In pure water it lost 95 grammes in weight, its colour and consistence remaining nearly the same; but of the portion acted upon by Vichy water, there only remained in the vessel a few grammes of very soft, greyish, semi-fluid matter. The mucous membrane of the stomach was only slightly softened by common water, but reduced to a jelly by Vichy water. As long ago as 1755 we are informed by Tardy† that similar experiments had been made, and that de Mony found a pleuritic deposit completely dissolved by one day's maceration in Vichy water. M. Baron has also made a number of observations with a view to show that these waters can prevent the formation of the false membranes of croup and diphtheria, an idea which is supported by some experiments, showing them to be capable of dissolving albuminous and fibrinous deposits. But all

* Guide Pratique des malades aux eaux de Vichy. Paris, 1861.

† Dissertation sur les eaux de Vichy.

these experiments present one important defect; they take no cognizance of the difference between dead and living animal tissues. Chemical must ever be subordinate to vital action. It is true that processes of chemistry play an active part in the living body, yet they are ever under the control of a system of laws which, for want of a better term, we call the vital principle: consequently, no experiment out of the living organism can accurately portray the changes continually going forward within, although those very processes may be essential to the due performance of the functions of life. It is at this point that the knowledge of the more exact sciences fails, and we are thrown back upon that experience which has been repudiated as a faithless *ignis fatuus* by some, while by others it has been extolled into an almost infallible guide. Be it ours to avoid both *Scylla* and *Charybdis*, assured that surrounded as we are on every side by sources of error, and seeking to associate in one view the teachings of various sources of knowledge, our proper place is that of humble listeners to the grand concert in which nature is continually blending the harmony of her many voices.

IX.

THE transition from the chemical and physiological action of Vichy water to its medicinal properties is both easy and natural. These qualities are all in reality closely allied, the strictly medical being only a deduction from the combination of all the others, corroborated or corrected by observation. The several springs do undoubtedly differ from each other, although their chemical constituents are not widely divergent. Perhaps the greatest difference in the effects may be traced to the temperature, this condition of water being known to exercise an important influence. The presence or absence of certain ingredients, such as iron, will readily explain the prestige of some springs for particular ailments. Then it has

been frequently argued that electricity may play a considerable part in the action of certain waters. Without entering into all the theories that have been propounded, we may fairly set out with the assumption that Vichy water is a potent agency for good or ill. Unlike what have been called, chemically, indifferent Spas, the waters of Vichy are positively mineral; they are strongly alkaline, their alkali consisting for the most part of bicarbonate of soda. We may therefore conclude that whenever this base is indicated a "Vichy course" may be safely tried, but when it is contra-indicated no rational physician would sanction the experiment. But a course of mineral water is altogether a different thing from the mere administration of a certain quantity of any drug. What is called "the course," or by our German friends, "the cure," has already been described as consisting of a number of baths, douches, &c., as well as the consumption by the stomach of the water, together with a strict attention to diet and regimen. It is not necessary to point out to the medical profession in England the share which recreation, diet, exercise and climate may have in the treatment pursued at the numerous Spas to which we sometimes send our patients. From the time when Abernethy sent an invalid on a fruitless errand to the North of Scotland, these circumstances have been fairly appreciated, and to them is probably to a large extent due, the fact that a resort to the springs in most cases is more beneficial than the use of the exported waters. But on the other hand, there are no doubt plenty of people to whom the Vichy cure would be equally or even more suitable at home; there are thousands who could not possibly leave home without a complete break up of their families and business, while many would be better under the immediate directions of their own medical attendants than that of the most able practitioners who were strangers to their constitutional peculiarities. For all these the pure water bottled at the springs, and the salts for making the baths are now to be had at a moderate price in London. A few words

on the precise action of the remedies may therefore be added. First, as to the baths alone. In the present state of science it is quite unjustifiable to assume that the solid matter contained in the water can be absorbed into the system through the skin. Numerous experiments have been made with a view of showing that various substances can thus find their way into the circulation, but they almost unanimously negative the idea. Nevertheless, not a few writers on baths still hold to the popular notion. It is even improbable that the cutaneous surface can take up pure water.

The sooner then we discard an untenable theory the better. In conversation with Dr. E. Barbier who has written two or three brochures on the mineral waters of France, I stated my objections to the idea of the alkali being taken into the system in the Vichy baths and he admitted the justice of them, adding, that as for the secretions becoming alkaline he had seen that result follow the use of warm baths of common water. Farther, in calling into question the view of the majority of practitioners at Vichy I could not accept their experiments, because, not only would every patient, although interdicted, be likely occasionally to sip from one of the springs and so vitiate the result, but there remains the fact that the whole of the ordinary drinking water in the neighbourhood is impregnated to a slight extent with soda, to say nothing of the quantities of cream of tartar to be met with in the wines furnished by the hotels to invalid visitors and which might give an alkaline reaction to the fluids.

By thus dismissing the notion of cutaneous absorption we do not refuse to credit the effects of the Thermal treatment at Vichy or any other Spa. An ordinary warm or hot bath may produce powerful effects both in health and disease. It is frequently prescribed as a diaphoretic and stimulant, or as a sedative, and sometimes as both at once. The sedative effect mostly follows the perspiration and is intense in proportion to the time spent in the bath, while the exciting quality can be increased by

raising the temperature. A brief immersion in a very hot bath stimulates the cutaneous nerves and through them the cerebral and spinal centres. A prolonged use of a warm but not hot bath exercises a sedative influence over muscular spasm, convulsions and pain; even soothes irritability of mind or of the nervous centres, calms the the heart's action and conduces to sleep. A number of prolonged warm baths would be likely to induce a state of languor and debility. Wherein then do the baths at Vichy differ? The practitioners of the place unanimously ascribe a stimulant, tonic effect to a course of mineral baths and assert that the tonicity imparted by this treatment is particularly durable. That the cure does not debilitate may be seen in the gaiety of those undergoing treatment and by the energy with which they enter into all the amusements of the place. Whence is this? Do the salts excite in any special manner the cutaneous surface? Does the carbonic acid, which is contained in the water, and seen to continually escape, act in this way? Is there any peculiarity in the electrical condition of the water? Does the mere temperature induce these results? or, finally, are they the effect of the combination of all these agents?

Without staying to answer these queries, or to investigate the theories to which they have given rise, we pass on to consider the effect of drinking the water. As soon as ever the liquid enters the stomach its chemical reactions are brought into play, and these will accordingly at once arrest attention. The acidity of the fluids in the stomach must immediately be diminished, and an alkaline condition may be temporarily established. Passing beyond the pylorus, the remedy will intensify alkalinity, and neutralize acidity as it encounters one state or the other. The first effect will thus be on the secretions of the alimentary canal and its mucous lining. Its relation to the liver and pancreas will be two-fold—acting directly on the secretion, and indirectly on the organ itself through the circulation. The fluid being absorbed into the system, the blood may have its natural

alkaline reaction increased, and as there is a constant tendency to eliminate the mineral matter, all the secretory organs are influenced by it. Of these the skin and kidneys are most remarkably affected. The perspiration may rapidly be neutralized, and the ordinary acid state of the urine replaced by an alkaline condition. Possibly the pulmonary exhalation may undergo an analogous change. The above notions, based on chemistry, strictly coincide with experience, and we may therefore conclude that it is to the chemical qualities of the water we must look for an explanation of its mode of action when introduced into the stomach; although we may admit that the effects produced on the skin by the baths would have their counterpart on the mucous membrane with which it is brought in contact.

We may then sum up the effects of a Vichy course, when judiciously prescribed, as restorative to the digestive and assimilative functions, and invigorating to the general health. The tone of the stomach is soon improved, digestion becomes easier and more rapid—pain and weight after food disappearing. The bile flows more freely. The bowels become regular. Diarrhoea, if previously present, ceases. The consequence of these changes is better assimilation, and, therefore, flesh is often gained. With the improvement in nutrition, the colour returns to the cheeks and energy to the mind.

The skin becomes delicate and glossy, perhaps partly from the local action of the alkali on the epidermis. Sometimes an exanthematous looking rash comes out. As to the special effect on the muscular system there is some difference of opinion, amongst authorities, which may perhaps arise from the varying duration of the baths on different individuals.

On the circulation there is no need to fear any considerable effect, either stimulant or depressant.

The nervous system may be excited—or on the other hand, drowsiness and constant tendency to sleep may exhibit its sedative influence. In some cases it is said to greatly increase animal spirits. I have already alluded

to the statement that an intoxicating quality has been conjectured by some to dwell in the water. It has been argued that this is due to the carbonic acid it contains—the same gas we are gravely reminded which causes the effervescence of champagne. As a stimulant I should certainly prefer this wine to any kind of soda-water.

Under the Vichy treatment, the gastric, biliary, cutaneous, and urinary secretions are augmented. What has been called a depurative influence is thus exercised on the blood, and through this medium on the solids. A more rapid removal of worn-out matter from the body, while a new supply can be assimilated, is undoubtedly an effectual method of restoring the health, and perhaps the increase of digestive and assimilated power, and the more rapid secretion which results from this treatment are sufficient to explain its value.

Lastly, on the female reproductive organs, a Vichy course is said to act in a special manner, and learned writers have gone as far as to attribute to it an influence extending over a protracted period, in some instances being so carried away, as to ascribe to the mineral treatment an increase which has taken place in the families of patients, months and even years afterwards. *Credat Judæus!* Could it act in any other way than as the general restorative described above? and there is nothing special in that.

In unsuitable cases the treatment may give rise to a number of unpleasant symptoms—mostly those of some special irritation—such as may be readily deduced from the foregoing particulars.

Even when most indicated it ought to be commenced with caution—the tolerance of the system being gradually ascertained—and in all cases moderation ought strictly to be enjoined, much injury having arisen from the excesses that have sometimes been practised.

X.

THE several properties of Vichy water having been already described, it is unnecessary to enter at length into the theories of those diseases in which it is chiefly recommended. From the general indications which have preceded, the English Medical profession will have no difficulty in deducing the particular applications. Nevertheless, some brief observations on the more common uses of the remedy in question may serve as an epitome of the subject, and an index to the points most worthy of consideration. First of all it may be observed that an alkaline Thermal treatment is of most value in chronic cases. Next, that the diseases in which its effects are most marked are those implicating the organs of the abdominal cavity. From these propositions we may deduce that a certain degree of chronicity or obstinacy in the disease need not necessarily discourage a trial of this mode of cure. Lastly, the Vichy cure may be attempted in all cases in which alkalies are chemically indicated. In the two former cases a complete course of Thermal treatment is to be carried out; in the last, the indications can often be fulfilled by drinking at the springs, or even by the use of the exported water. Bearing in mind the chemical qualities of Vichy water, the physician will find numerous cases in his daily practice in which he may prove its value. It may safely and conveniently take the place of many of the common alkaline formulæ, especially those containing soda, and it will be found more certain in composition, and therefore in its effects than ordinary soda-water—an article which too frequently contains none of the alkali from which it takes its name, as a morsel of test-paper will easily establish. But manifold as are these slighter cases, it may be considered only fair to summarize in a few paragraphs some of its more important uses.

DISEASES OF THE STOMACH.

That by its mere chemical reaction, Vichy water should appease the pains dependent on an excess of acid in the *primæ viæ* is at once evident, and that thus numerous forms of INDIGESTION should be cured is equally easy of comprehension. On the other hand, this remedy has been found efficacious where the action called into play by its continual use, seemed rather to have been the immediate cause of the cure. From some valuable statistics scattered through the useful work of Dr. Barthez,* whose position as Senior Physician to the Military Hospital at Vichy, afforded him a field for observation by which he has greatly profited, I gather, that out of 100 cases of GASTRITIS, this accomplished practitioner succeeded in curing 51 and relieving 36, while only 13 were unbefited. In PYROSIS he cured 80 per cent. of the patients. In GASTRALGIA 52 cases out of 100 were cured, 43 relieved, and only 5 continued in the same condition; while other forms of DYSPEPSIA were more tractable than even PYROSIS.

DISEASES OF THE LIVER.

Closely allied to the previous ailments are a number of liver complaints, in which the reputation of Vichy has long been established and the number of patients with this organ more or less involved, to be met around the Grande Grille has already been alluded to. Vichy is in fact the Spa to which those resort who have served in Algeria and other hot countries, and who suffer from the effects of tropical climates on the liver; besides which other diseases of the same viscus are here successfully combated. Instead of entering on the several theories on the strength of which alkaline treatment is recom-

* Guide Pratique des Malades aux eaux de Vichy. Paris, 1861.

mended in these cases, I shall take it for granted that these points are well known to the reader, and merely stop to quote the statistics of Dr. Barthez on this point. Out of 100 cases of what he calls hepatalgia, or hepatic colic, 83 were cured and 17 relieved. In simple engorgement of the liver, with or without colic, 45 were cured, 40 relieved, and 15 received no benefit. This observer adds, that the treatment would have been still more beneficial had not some of the patients suffered from the injurious drugs administered before their resort to Vichy. Out of 100 cases of biliary calculi treated by the same author, 60 were cured, 21 relieved, and 19 underwent no change. JAUNDICE which may be looked upon rather as a symptom than a disease, very often readily yields to the Thermal treatment at Vichy, while that condition sometimes denominated sluggishness of the liver, as well as those forms of constipation or diarrhœa dependant on irregular secretion of the bile, are equally relieved or removed. In the treatment of all these diseases drinking at the Grande Grille is usually prescribed in conjunction with the baths.

DISEASES OF THE SPLEEN.

Engorgement of the spleen is as commonly treated at Vichy as that of the liver. Numerous subjects of this disease, contracted from residence in Africa, as well as those who have lived in marshy districts, every year find relief at this Spa. It is asserted that great enlargement of the pancreas following intermittent fever is speedily reduced by the conjoint use of the baths and drinking one of the springs, and, moreover, that with the diminution of the diseased organ, the general state of the patient is also improved. From the experience of the Military Hospital given in the work of Dr. Barthez, already cited, this disease would appear less amenable to the treatment than the same condition of the liver. Out of 100 cases of enlargement of the spleen originated by ague, the

proportion was 37 cured and 45 relieved, while 18 continued in the same state as before treatment.

It will not be out of place here to mention that peculiar *cachexia* so often engendered by marshy miasms. The pallid or sallow anæmic look of the patient, dependant on some profound alteration in the nutritive functions, and accompanied by a vitiated state of all the secretions, and sometimes by passive hæmorrhages, more or less severe, has been attributed to a changed state of the blood—a diminution of its plasticity, a decrease of the red globules, and increase of the white—to use a long word **LEUCOCYTHEMIA**. This disease might be supposed incapable of benefit from alkalies, and many physicians would hesitate to try them. Dr. Barthez indeed admits that Vichy treatment would not be proper in such a state, if arising from a congenital lymphatic temperament, but he declares it to be curative when this condition is brought about by bad climate, indigestion, insufficient nutriment, inflammation of the liver or spleen, disease of the ganglionic system, or ague. Whenever prescribed for these cases the chalybeate springs would naturally be selected and their action might be assisted by ferruginous preparations and other appropriate tonics.

DISEASES OF THE URINARY ORGANS.

The deposit of lithic acid and lithates may be immediately suspended by the introduction of the bicarbonate of soda into the system, so that we need not be surprised to learn that the Lithic Diathesis may undergo a change by a complete course of Thermal alkaline treatment. Uric acid, the urates and the cystic oxide are all very soluble in alkaline liquids. Vichy water is therefore a sort of specific for **GRAVEL**, provided that it be composed of either of these substances. But let it never be forgotten that the phosphates and oxalates of the urine are immediately precipitated by alkalies. It therefore follows that Vichy water may be positively dangerous in the phosphatic

diathesis. This indeed is denied by Dr. Daumas,* who professes to have found the treatment as efficacious in white as in red gravel and attributes this success to the *vital* as distinguished from the *chemical* action of the remedy. The explanation is, however, not satisfactory in face of the fact, that a pellicle of ammoniaco-phosphate of magnesia may be seen on the surface of the urine as soon as it becomes neutralised or acquires the faintest alkaline reaction. In the deposit of lithates Vichy water is a natural remedy, and according to the statistics of Dr. Barthez, cured 55 per cent. of the patients, and relieved 40 per cent. more, only leaving 5 per cent. unimproved.

CALCULI. It is not surprising that numerous differences of opinion should surround the question as to the capability of this treatment dissolving renal or vesical calculi. In 1839 M. Bérard† reported that this was not only possible, but offered great probabilities; and further, that a trial could not be attended with danger. M. Ossian Henry afterwards gave favourable opinions from a number of experiments with the liquid on certain calculi; but these experiments in the laboratory are by no means conclusive as to the possibility of acting on the human body, and although Dr. Barthez thinks small stones may be dissolved, he does not pretend that large ones can, while Dr. D. Fardel and other authorities do not admit that any calculus once formed can be thus eliminated. These authors consider that where the symptoms have disappeared the stone has found its way out *per vias naturales*. The immense preponderance of uric calculi over phosphatic, is perhaps the most hopeful fact in the history of this painful disease in relation to the long vexed question of removal by solution.

VESICAL CATARRH. After all the ordinary remedies have failed, good results have sometimes been brought about in this disease by a complete course of Vichy treat-

* Étude biographique et Médicale des sources de Vichy. Paris, 1860.

† Bulletin de l'Académie.

ment. Of 97 cases admitted into the Military Hospital 35 are reported as cured and 51 relieved, no difference being perceptible in the remaining 11. Bathing as well as drinking is employed in this disease; enemas also have been found useful, and injections have been tried. This last local application deserves a further trial. Cases complicated with calculus, paralysis of the bladder, and incontinence of urine have also obtained relief.

GOUT.

The excess of those acids best neutralized by soda, so commonly met with in gout, connects this disease with those that have preceded. Whether we believe with M. Ch. Petit* that the secretion of uric acid is the cause of gout, or with Fardel,† that this statement ought to be reversed, we may start from the decision of the Paris academy when the question was violently agitated, whether Vichy water was appropriate in gout. This learned body agreed that it had hitherto been "*useful rather than noxious.*" Next let us take up the statistics of the Military Hospital so often cited. In 57 patients out of 100 admitted under Dr. Barthez, the fits entirely disappeared, although they had previously recurred several years—once or more a year: 34 were so much relieved, that some of them considered themselves quite cured, 9 were neither better nor worse. This physician declares that in all his experience he never saw gout recede to the internal organs, nor the blood suffer injury from the treatment, although many patients had carried it to excess. The error of abusing the remedy has been previously noticed. It is again referred to because it has been in gout that the alkalinisation has often been pushed beyond the limits of prudence. A good remedy in moderate doses, may, in unlimited quantities, prove a

* *Du mode d'action des eaux Minérales de Vichy.* 1840.

† *Traité Thérapeutique des eaux Minérales.* 1860.

poison. The spring of the Célestins has the greatest reputation for gout. Perhaps being cold and of more pleasant taste, it more easily pleased the fastidious palate. There is certainly nothing in the chemical constituents to render it so much superior to its fellows—the ingredients in all being so nearly alike. It has appeared to me, that one reason for its proving so valuable in these cases, is its position. Located half a mile or more from the establishment, to drink at this fountain two or three times a day, means to walk a certain distance, and we all know what a valuable adjuvant to the treatment a certain amount of walking exercise must be: especially would this walk prove superior to the dreary marching up and down the gallery for so many minutes, which is not seldom prescribed. Arrived too at the fountain, and the draught taken, the patient can continue his stroll in this picturesque garden, or repose before his return in the pavillion fitted up for his use. The baths are less employed in gout than other ailments, and the spring being cold, the treatment might be carried out in England with the bottled waters, could we prevail on the patient to submit to the other hygienic conditions.

RHEUMATISM.

In this disease, as in gout, we have excess of acid, as seen in the urine and perspiration, as well as an increase of fibrine in the blood, so that soda might seem to be indicated. Nevertheless, the treatment is not so completely established and has never been so popular as in gout. In muscular as well as articular rheumatism the series of hot baths would probably soothe the pain, while imbibing the water into the stomach might relieve other symptoms. The point deserves more attention than has as yet been given it by the local practitioners.

DIABETES.

This intractable disease has been submitted to the Vichy treatment, with results that have encouraged some observers. In 100 cases treated by Barthez, 50 lost all traces of sugar, in 16 it greatly diminished, while in 34 it remained the same in quantity as before treatment, and that in spite of improved digestion and increased muscular strength following the treatment. From his observations this author concludes that if the patient on arriving at Vichy only secrete a small quantity of sugar, it may disappear under the Thermal treatment, but that if the quantity be large this result will not be readily attained. He further remarks, that as this manifestation is likely to recur, the patient should go to Vichy several successive years. Dr. Daumas seems to entertain a less favourable view, while Fardel concludes very rationally that, without looking on the treatment as a chemical specific, since equally good effects may follow other methods, none approaches that of Vichy for the certainty and regularity of its results in the majority of cases. With this practical result we will leave the chemical theories to be settled by the eager combatants under Miahle, Bouchardat and Claude Bernard, than whom no abler generals need be desired. Our present task is too practical, and our limits too small to take even a sketch of the battle ground.

ALBUMINURIA.

Some of the Vichy physicians have thought that the elimination of albumen by the urine might be held in check by their treatment. It is quite conceivable that the stimulation of the skin by hot mineral baths, conjoined with hot alkaline drinks, together with other tonics and stimulants, such as wine and iron might in some cases be useful. But this is little more than making

the hot mineral baths a valuable adjuvant to other treatment. Especially would such practice be likely to succeed where the albuminuria manifested itself as the sequel to some eruptive fever. In Bright's disease, much circumspection would be required in allowing the alkali to be taken into the stomach; whenever the results of desquamation are to be found in the urine, the utmost caution should be exercised. Possibly in minute doses the alkali might sometimes be of service, though I should be more inclined to confine the Thermal treatment of this disease to the baths, looking upon these only as an adjunct to the ordinary means employed.

DISEASES OF THE HEART.

Cardiac disease is usually looked upon as precluding a resort to mineral waters, and Vichy among the rest. Nevertheless, some French authorities have proposed their employment, and MM. Vernière and Dufresse de Chassaigne, have reported to the Academy favourable results from a trial of the chalybeate waters of Saint Nectaire and Chaudes-Aigues. Dr. Nicolas has also maintained* that the mineral treatment of Vichy may be advantageously resorted to in certain organic diseases of the heart, and most especially in those arising in the rheumatic and gouty temperaments. His theory is not inferior to many others proposed on the mode of action of this remedy,—indeed, it consists in a combination of the chemical and vital theories propounded by others, and is an exemplification to what extent we may go when once we look upon the human body as a mere laboratory. The ingenious author will find it difficult to convince the English mind that the mineral water finds its way to a valvular concretion,

* *L'utilité des alcalins et surtout des eaax Minérales de Vichy contre certains affections organiques du cœur.*

and then breaks it up and dissolves it. Besides which, although it may be yet found that the treatment is less dangerous than has been believed in heart disease, it will always demand the utmost precaution in prescribing it.

FEMALE DISEASES.

I am not about to rush into the statements that may be anticipated, from what has been written on the efficacy of mineral waters in general, in this class of disease, nor to repeat the incredible theories so long bandied about. That a number of the patients may be benefited by the various healthful influences by which they are surrounded at most spas is incontrovertible, and that certain mineral waters are particularly efficacious requires no testimony. At Vichy, it is by the chalybeate springs that this class of maladies is treated, nor need we care to deny that the small, yet perceptible quantity of iron in the Mesdames or the Lardy may be of peculiar value in ANÆMIA. But while admitting this, we are not to overlook the importance of other hygienic measures, and the general improvement of the health which follows a course of the baths is perhaps the first step in the cure. At the same time where iron is deficient in the blood, it is not to be doubted that the system is capable of separating it from a liquid in which a minute quantity of that metal exists quite as easily, and for aught we know, more easily than from our medicinal preparations.

In CHLOROSIS, M. Petit, in his already quoted work, looks upon the efficacy of Vichy treatment as equalled only in few other diseases. This seems, after what has preceded, almost an exaggeration, yet all the other local practitioners regard the ferruginous Vichy springs as peculiarly serviceable in this ailment, and several maintain that the Mesdames and the Lardy are sufficient for the cure of all cases. The first good effect is almost invariably produced on the digestive system, and how

often when the general health improves under any kind of treatment, the special organs return to the discharge of their functions, is well known to every observer. In the merely sympathetic cardiac symptoms which often accompany these cases, there can be no contra-indication to the treatment.

CONGESTION OF THE UTERUS, as well as some degree of HYPERSTROPHY, and all that terrible train of symptoms resulting from inflammation, irritation, or even natural stimulation of this organ may be appropriately submitted to Thermal treatment, and every year numerous sufferers find at Vichy some relief from the consequences of difficult or too frequent labours, painful miscarriages, irregularities of menstruation, falls or other accidental injuries, as well as natural and preventable sources of irritation. LEUCORRHœA should be looked upon as a symptom only, and its management referred to its cause.

OVARIAN disease or mere irritation may have a similar origin, and give rise to the same train of distressing symptoms. Happily it is also frequently amenable to the same treatment. It is in these cases that *piscines* are mostly used. These baths are large enough for several patients to take together—a sort of swimming-bath in fact. Their only recommendation is that the patients can move freely about during the time of the bath, and therefore may stay in it a longer time without being overwhelmed by the tediousness. It has been urged also that they can talk together, but I am not one of those who deem this an advantage, for conversation would naturally turn on the one subject of the patients' maladies, and I believe the less attention they give to their local symptoms the better. Nor can I altogether reconcile this with the peculiar delicacy which should be the charm of the female mind. The less fuss made about the uterine or ovarian lesions the better. The disgraceful manner in which some have of late years pandered to the ignorance of the fair sex, and sought by local diagnosis and treatment, to retain in their hands a specialty likely to enrich them, is a

standing reproach to our profession, and deserves the condemnation of the high-minded practitioner. True, these organs are liable to disease, and we are called upon to investigate and treat them accordingly. Their diseases are liable to set up a peculiarly distressing train of symptoms—so obscure at times as to demand the utmost exercise of our sagacity—so incomprehensible to the patient, as to add considerably to her suffering, and compel her to place an almost unlimited confidence in her adviser. Let us then denounce every one who abuses that confidence. When local investigation and treatment are required, let it be carried out with boldness and decision,—tempered with gentleness. In the presence of sickness, neither riches nor poverty ought to influence us. When brought face to face with suffering, aggravated by those sentiments which constitute feminine grace, compelled by duty to some extent to wound that modesty which is even more attractive than beauty, let our conduct be such that the confidence reposed in our skill and kindness may gradually increase. Here, without any of the paltry forms of politeness or etiquette, is a field in which to cultivate the heart of the true gentleman. Here, while discharging a painful duty, may we not gain the esteem of our fellows, and make real progress in goodness?

Guided by these higher considerations we may, with benefit to our patients and credit to ourselves, employ both local and general remedies, and amongst each of these the waters of Vichy may claim a place. It is in these diseases that enemas will be found of the greatest service, and injections may *in some cases* be safely employed, though only with considerable circumspection. It is from the use of the warm baths that I should be disposed to anticipate most advantage. Acidity in the *primæ viæ*, so often present, could be appropriately relieved by drinking at one of the springs. Douches and frictions will suggest themselves as likely to benefit many sufferers, and exercise—walking or driving according to circumstances—as well as every other means of

restoring the health, including sometimes the administration of some drugs, will prove valuable adjuncts to the treatment. In malignant diseases it has been found by some that the baths have moderated the sufferings of the patients, and afforded a temporary tonic to the system but probably warm minerals baths at home would be equally good, and of a hundred-fold more comfort to the unhappy sufferer. There could be no harm in trying them made with the Vichy salts, now to be had in England, the extraction of which has been previously described.